**IN THE CLAIMS:**

1.    (Canceled)

2.    (Currently Amended): The method of claim ~~1~~60 wherein the distance-based filter further comprises a median filter.

3.    (Currently Amended): The method of claim ~~1~~60 wherein the distance-based filter further comprises a low-pass filter.

4.    (Currently Amended): The method of claim ~~1~~60 wherein the distance-based filter further comprises one of a band-pass filter and a high-pass filter.

5.    (Currently Amended): The method of claim ~~1~~60 wherein computing a locus of the samples comprises computing an average of ~~a~~ at least two of the samples.

6.    (Currently Amended): The method of claim ~~1~~60 wherein computing a locus of the samples comprises computing one of an arithmetic mean, a geometric mean, a harmonic mean, and a quadratic mean of the samples.

7.    (Currently Amended): The method of claim ~~1~~60_ wherein computing a locus of the samples comprises computing an average of ~~a~~ at least two of the samples together with the input sample.

8.    (Currently Amended): The method of claim ~~1~~60_ wherein computing a locus of the samples comprises computing an average of ~~a~~ at least three of the samples.

9.    (Previously Presented): A method for filtering data, the method comprising:

          receiving a plurality of data samples;

computing a locus of the samples by computing an average of a last three of the samples together with the input sample;

normalizing a value of an input sample to a range centered on the locus;

passing the data through a distance-based filter; and

normalizing an output value of the distance-based filter to a predetermined output range.

10.    (Currently Amended): The method of claim ~~1~~9 wherein computing a locus of the samples comprises selecting a previous filter output value.

11.- 32. (Canceled)

33.    (Previously Presented): A computer program product for filtering data, wherein the computer program product comprises:

a computer-readable storage medium; and

computer-readable program code means embodied in the medium, the computer-readable program code means comprising:

first computer-readable program code means for determining a locus of a received plurality of data samples by determining an average of at least a last three of the data samples together with the input sample,

second computer-readable program code means for normalizing a value of an input sample to a range centered on the locus determined from the first computer-readable program code means,

third computer-readable program code means for distance-based filtering of the data, and

fourth computer-readable program code means for normalizing an output value of the distance-based filter.

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34. (Currently Amended): The computer program product of claim ~~28~~ <u>33</u> wherein the first computer-readable program code means determines the locus of the samples by selecting a previous filter output value.

35. (Previously Presented): The computer program product of claim 33 wherein distance-based filtering of the third computer-readable program code means further comprises a median filtering.

36.-52. (Canceled)

53. (Previously Presented) The computer program product of claim 33 wherein the first computer-readable program code means for determining a locus of a received plurality of data samples further comprises computer-readable program code means for determining a locus of a received plurality of normalized data samples.

54. (Previously Presented) A method for filtering data, the method comprising:

    receiving a plurality of data samples;

    computing a locus of the samples;

    normalizing a value of an output sample to a range centered on the locus;

    passing the data through a distance-based filter;

    normalizing an output value of the distance-based filter to a predetermined output range; and

    limiting the normalized output value of the distance-based filter within selected limits of normalization, including adjusting the filter output value and the internal filter storage locations to remain within the selected limits of normalization.

55.    (Previously Presented): The computer program product of claim 54 wherein adjusting the filter output value and the internal filter storage locations further comprises adjusting the filter output value and internal filter storage locations by plus or minus one circle.

56.-59. (Canceled)

60.    (Currently Amended): ~~The method of claim 1~~ A method for filtering data, the method comprising:

    receiving a plurality of data samples;

    computing a locus of the samples;

    initially normalizing a value of an input sample to a range centered on the locus;

    after normalizing the value of the input sample, passing the data through a distance-based filter; and

    normalizing an output value of the distance-based filter to a predetermined output range,

    wherein initially normalizing a value of an input sample to a range centered on the locus further comprises selectively adapting the normalizing range as a function a range of the data samples.